

Oral Health and Systemic Health

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Oral Health and Systemic Health Are Interrelated

- ▶ Oral disease can affect-
 - ▶ systemic health, growth and development in children
 - ▶ systemic health and healthy aging in adults
- ▶ Systemic conditions or treatment of systemic conditions-
 - ▶ can affect oral health
 - ▶ can impact the feasibility of dental care delivery



The Most Prevalent Oral Diseases

- ▶ Caries
- ▶ Periodontal disease

In addition, an important risk factor for oral disease is inadequate amounts of saliva (dry mouth) that lead to caries, periodontal disease and abnormal conditions of the mucosa (lining of the mouth, tongue surface, palate)



Caries

- ▶ Transmissible infection caused by aerobic bacteria that makes holes in teeth and can cause serious infections in the body
- ▶ The most common disease in children
 - ◆ 40 % of low-income children preschoolers had tooth decay in 2010
 - ◆ 58% of 3rd grade children had tooth decay in primary and/or permanent teeth
- ▶ Common in older adults
 - ▶ Nearly one-fifth of older adults in Washington state (approx. 150,000 people) have untreated dental caries.

Caries

- ▶ Major risk factors:
 - ▶ poor oral hygiene
 - ▶ high sugar or refined carbohydrate dietary intake
 - ▶ low salivary flow rates
 - ▶ having systemic disease that requires medications that cause oral dryness or that contain high sugar content

How does caries impact systemic health?

If left untreated, caries can lead to:

- ▶ tooth loss
- ▶ poor nutrition
- ▶ delayed speech development
- ▶ difficulty concentrating in school
- ▶ overwhelming infection, death
- ▶ risk for serious health problems



The Cost of Caries

- ▶ Extensive caries in a young child may require treatment with sedation or in a hospital operating room
 - ▶ Expensive - average cost is \$10,000
 - ▶ Risk exists for sedation or general anesthesia adverse outcome
- ▶ Individuals without dental insurance often seek care in a hospital emergency room
 - ▶ Expensive- cost of more than 54,000 dental related visits to the ER exceeded \$36 million over an 18-month period

Periodontal Disease

- ▶ Chronic inflammatory infection due to anaerobic bacteria
- ▶ Caused by dental plaque accumulation
- ▶ Affects the gingiva (gums) and bone that supports the teeth
- ▶ Characteristics:
 - ▶ Light colored deposits on teeth
 - ▶ Bleeding, redness of gingiva
 - ▶ Loose teeth, drifting of teeth
 - ▶ Tooth loss



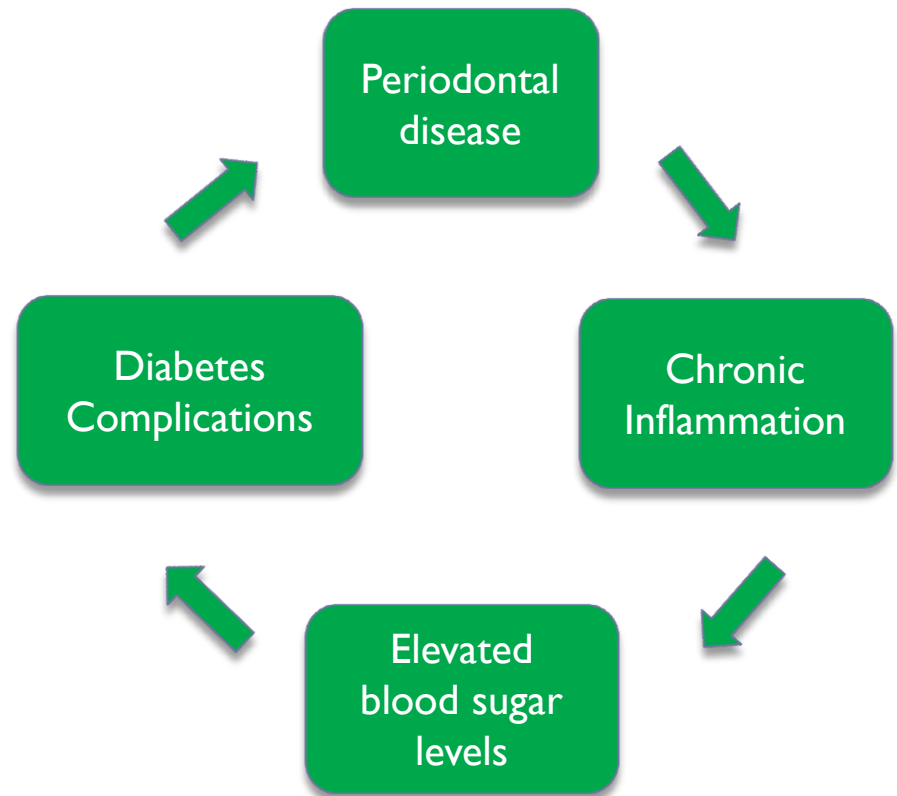
How does periodontal disease impact systemic health?

- ▶ Linked to diabetes, heart disease, stroke and pneumonia
- ▶ Linked to premature births and low-birth weight babies
- ▶ Atherosclerotic vascular disease is the #1 cause of death globally
- ▶ Diabetes affects nearly half a million adults in Washington

Periodontal Disease and Diabetes

- ▶ Periodontal disease is considered a complication of diabetes
- ▶ Untreated periodontal disease is linked with poor control of blood sugar levels, which leads to other costly diabetic complications
- ▶ Poor control of blood sugar levels increase the risk of periodontal disease and oral mucosal disease

Two-Way Relationship: Periodontal Disease & Diabetes



The Cost of Periodontal Disease

- ▶ **Tooth loss**
- ▶ **Poor nutrition**
- ▶ **Impaired health due to poor nutrition and chronic infection**
- ▶ **More complications in diabetic patients**



Benefits of Preventive Care of Periodontitis

- ▶ Compared to those without dental care, individuals with diabetes and other chronic conditions who received regular dental care had
 - ▶ lower average annual medical care costs (\$1800)
 - ▶ between 10 – 40 percent lower medical costs

The Importance of Saliva

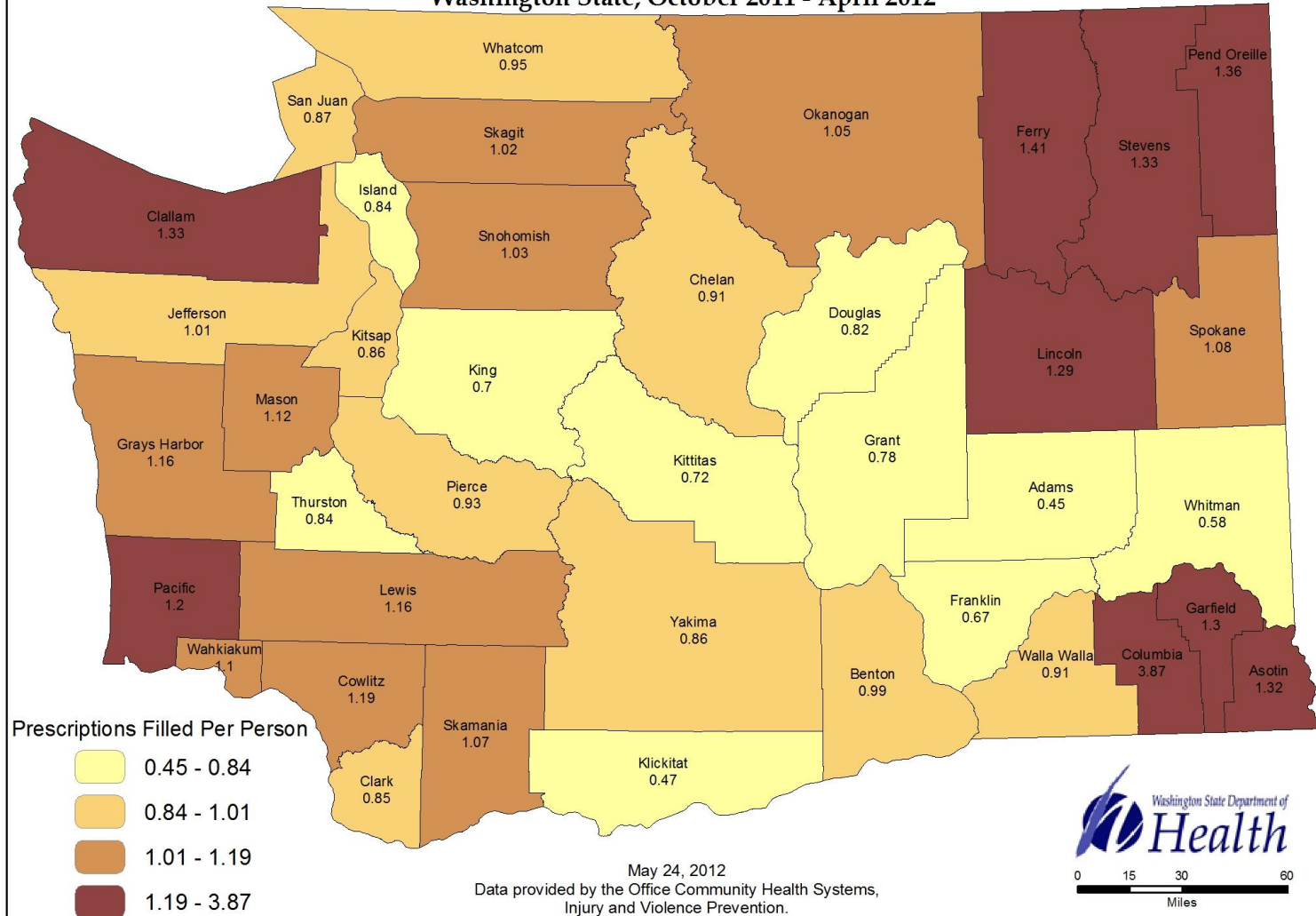
- ▶ Saliva is very protective of oral tissues due to its physical and chemical properties
- ▶ Suboptimal salivary flow rate and quantity in mouth increases the risk for caries, periodontal disease and mucosal (soft tissue lining of the mouth) disease
- ▶ Major causes of low salivary flow:
 - ▶ Side effects of medications (#1 cause)
 - ▶ Autoimmune disease (e.g. Sjogrens Syndrome)
 - ▶ Cancer therapy involving head and neck radiation



Therapeutic Class for Prescription Drug-Monitoring Program (WA): ALL for All of 2012 by Total Qty

Drug Category	Description	Number of RX	Total QTY	Total Days Supply
17	COLD AND COUGH PREPARATIONS	76,631	484,238,596	686,541
40	NARCOTIC ANALGESICS	2,291,012	146,764,940	32,284,890
7	ATARACTICS-TRANQUILIZERS	610,819	28,906,320	12,678,698
48	ANTICONVULSANTS	247,406	15,734,792	7,185,021
47	SEDATIVE NON-BARBITURATE	453,439	14,810,804	13,037,014
16	COUGH PREPARATIONS/EXPECTORANTS	81,772	13,431,420	528,203
12	AMPHETAMINE PREPARATIONS	241,744	12,362,898	7,009,180
46	SEDATIVE BARBITURATE	23,551	2,896,301	1,006,041
11	PSYCHOSTIMULANTS-ANTIDEPRESSANTS	14,715	671,316	495,359

Pain Reliever Prescriptions Filled Per Person **Washington State, October 2011 - April 2012**



Most prescribed medication in WA state

For all of year 2012 up to June 2012 (approx.)

Generic Name	HYDROCODONE /ACETAMINOPHEN
Number of RX	1,147,508
Total QTY	60,324,835
Total Days Supply	13,612,112

Side effect: Xerostomia or Dry Mouth

The Cost of Dry Mouth

- ▶ 1 in 3 adults have dry mouth
- ▶ Dry mouth causes:
 - ▶ Difficulty eating, swallowing, speaking
 - ▶ Difficulty wearing dentures
 - ▶ Dental caries, particularly at the gumline area
 - ▶ Periodontal disease
 - ▶ Mucosal disease
 - ▶ Tooth loss



The problem with tooth loss

- ▶ More than 38% of all adults in Washington have had their teeth removed due to tooth decay or periodontal disease
- ▶ 20% have lost all teeth
- ▶ Wearing dentures is very difficult when the mouth is dry
- ▶ Missing teeth or lack of teeth affect ability to maintain good nutrition
- ▶ Poor nutrition affects systemic health

Caries and Periodontal Disease are Preventable with ...

- ▶ Education about healthy diet, frequency of eating
- ▶ Oral hygiene education
- ▶ Access to preventive dental care
- ▶ Water fluoridation programs



Summary

- ▶ Oral disease, including caries and periodontal disease, are interrelated in a bi-directional manner with systemic health
- ▶ Oral disease generates high medical costs due to increased complications in diseases such as diabetes
- ▶ Advanced oral disease incurs high medical costs when treatment is rendered in a hospital setting such as the OR or ER
- ▶ Systemic diseases or their treatment, particularly those that cause dry mouth, increase the rate of caries and periodontal disease



Summary (continued)

- ▶ Oral disease that results in tooth loss affects ability to maintain healthy nutrition, which in turn, increases risk of systemic disease
- ▶ Caries and periodontal disease are preventable with:
 - ▶ Education
 - ▶ Access to preventive dental care
 - ▶ Fluoridated water and other fluoride delivery programs

